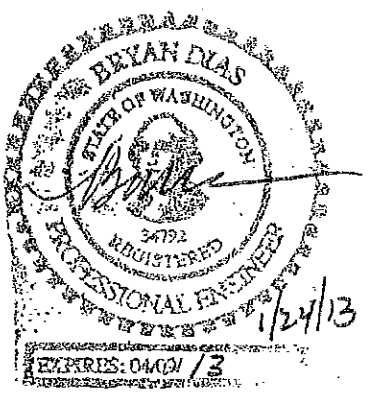
Washington State Department of Transportation

Memorandum



January 23, 2013

TO: Jeff Uhlmeyer / Mark Russell, 4-7365

FROM: Bryan Dias, 4-7440

SUBJECT: I-5 XL-3497 MP 132.84 to MP 134.87
Tacoma / Pierce County--HOV
M St. to Portland Ave.
Pavement Design Report Update #2

This is the Olympic Region Materials Pavement Design Report for this project located in Pierce County. This report supersedes the original report dated December 19, 2011, updated November 6, 2012.

The main revision contained in this memorandum concerns shoulder depths. Based on the latest information provided by the Olympic Region HOV office the I-5 mainline shoulders may be converted to Express Toll Lanes (ETL) in the future. This future plan includes converting the shoulders on I-5 to ETL from the King County line south to the I-5 / SR 16 Interchange. As a result, constructing full depth shoulder pavement sections through the Tacoma Pierce County HOV corridor is warranted.

This project proposes constructing an I-5 HOV lane both directions, reconstructing mainline and off-on ramps within the corridor limits including City of Tacoma cross-street arterials. See attached vicinity map for proposed alignment locations and spreadsheet containing pavement surfacing depths.

We recommend the following surfacing depths:

I-5 Mainline NB / SB----HOVand NCD Ramp

The number of ESAL's for the design and acceptance of the HMA used as base under PCCP shall be 0.29 million as stated in Section 5.3.8 of the June 2011 WSDOT Pavement Policy. Compaction requirements same as traveled lanes per WSDOT Standard Specification 5-04.3(10).

Lanes & Shoulders
1.08-ft. PCCP with corrosion resistant dowel bars
0.35-ft. HMA Class ½" (PG 64-22)
0.35-ft. CSBC

Note: On mainline, the right lane (truck lane panel) shall be constructed 14 feet wide striped at 12 feet. Corrosion resistant dowels shall be used for the portion of the widened lane starting 1.0 foot from the panel shoulder edge.

Mainline dowel bar spacing per the June 2011 WSDOT Pavement Design Policy:

- Truck lanes (lanes 1 and 2 in multi-lane highways): Eleven corrosion resistant dowel bars per joint, first dowel bar is located 12 inches from lane edge and spaced on 12 inch centers, see Standard Plan A-40.10-02.

- Non-truck and HOV lanes (lanes 3, 4 & HOV): Eight corrosion resistant dowel bars per joint (four in each wheel path), first dowel bar located 12 inches from lane edge and spaced on 12 inch centers.

NB 28—Ramp
The number of ESAL's for the design and acceptance of the HMA shall be 10.5 million.
Note: Due to the high volume of truck traffic and start/stop motion the PG Binder for this section of the project has been increased to (PG 70-22).
Lanes & Shoulders
0.85-ft. HMA Class ½" (PG 70-22)
0.60-ft. CSBC

Ramps 27SB, NBN, NBS, NNB, NSB, PSSB, SBN, SBS, SNB, SSB and Pacific Avenue
The number of ESAL's for the design and acceptance of the HMA shall be 10.5 million.
Lanes & Shoulders
0.75-ft. HMA Class ½" (PG 64-22)
0.50-ft. CSBC

27COT, McKinley Way, and East L St.
The number of ESAL's for the design and acceptance of the HMA shall be 10.5 million.
Lanes & Shoulders
0.60-ft. HMA Class ½" (PG 64-22)
0.40-ft. CSBC

CONTRACT PROVISIONS

- The Olympic Region Materials Office recommends GSP 5-04.3(3)A.OPT2.GR5 concerning Materials Transfer Vehicle be included in the PS&E.
- The Olympic Region Materials Office recommends GSP 5-04.3(10)B1.OPT1.GR5 concerning control of HMA shoulder compaction be included in the PS&E.
- The ESAL's provided in this memorandum should be included in GSP 5-04.2.OPT1.FR5.

Closure

If you have any questions regarding this Memorandum please contact Bryan Dias at (360) 704-3213 or Terry MacAuley at (360) 704-3279.

Jeff Uhlmeyer / Mark Russell
State Pavement Design Engineer

2/4/13
Date

BD:tm
TM
Attachments

cc: Joe Perez, 4-7376, w/attachments
OR Program Management, 4-7440, w/attachments